Carestream

User Guide for the Lux 35 Detector

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Notices and Conventions

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Note:
Notes provide additional information, such as expanded explanations, hints, or reminders.

Important:
Important highlights critical policy information that affects how you use this manual and this product.

CAUTION:
Caution points out a potentially hazardous situation which, if not avoided, might cause minor or moderate injury.

Authorized European Representative

EC REP

Carestream Health France SAS

207, Rue de Bercy

75012 Paris

France

CAUTION:
Federal law restricts this device to sale by or on the order of a physician.

CAUTION:
If you witness or become aware of a potential safety issue with this equipment, take the appropriate safety measures and report this to your Carestream Service representative immediately.

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Publication History

1 Safety and Regulatory Information

CAUTION:

- For continued safe use of this equipment, follow the instructions contained in this operating manual.
- Study this manual carefully before using the equipment and keep it at hand for quick reference.
- The manufacturer assumes no liability from problems that occur when you do not follow the cautions in this manual.

Note:

For technical information on the safety, regulatory, hardware, and operation on related products and systems, see the following publications:

- *CARESTREAM DRX-1 System Battery and DRX Detector Battery User Guide*
- *CARESTREAM DRX-1 System Battery Charger User Guide*
- *User Guide for CARESTREAM DRX-1 System Tether Interface and Model DRX-TPC1*
- *CARESTREAM System Software Online Help*
- User Guide for the CARESTREAM DRX-1 System

Safety Symbols

The following symbols may be used for marking on this equipment:

	Follow the operating instructions
	Type B applied part
	Caution

Refer to the instruction manual

Medical Equipment Classification

Lux 35 Detector

Important:
This device is a patient contact equipment and is a Type B applied part.

Type of protection against electrical shock:	Internally powered
Degree of protection against electrical shock:	Type B applied part
Degree of protection against ingress of foreign material:	IP57 (Detector only without battery) For improved cleaning performance, the detector provides an IP57 rating. See the **Procedure to Clean the Detector**and the **Procedure to Clean the Battery Well**. The Detector IP57 rating does not apply when the battery is installed.
Mode of operation:	Continuous operation
Flammable anesthetics:	Not suitable for use in the presence of flammable anesthetics or a mixture of flammable anesthetics with air or oxygen or nitrous oxide.

Product Safety Standards

USA	ANSI/AAMI ES60601–1:2005/ (R) 2012+ Amendment 1:2012 + C1:2009/ (R) 2012 + A2:2010/ (R) 2012—Medical Electrical Equipment—Part 1: General requirements for safety and essential performance
Canada	CAN/CSA C22.2 No. 60601-1:2014—Medical Electrical Equipment—Part 1: General requirements for safety and essential performance (includes Amendment 1)
European Union	EN 60601–1:2006 + AC:2010 + Amendment 1:2013—Medical Electrical Equipment —Part 1: General requirements for safety and essential performance
	EN 60601–1–6:2010 + Amendment 1: 2015—Medical Electrical Equipment—Part 1: General requirements for safety and essential performance—Collateral Standard: Usability
International	IEC 60601–1:2005 + CORR. 1:2006 + CORR. 2:2007 + Amendment 1:2012 (or IEC 60601-1:2012 reprint) —Medical Electrical Equipment—Part 1: General requirements for safety and essential performance
	IEC 60601–1–6:2010 + Amendment 1:2013—Medical Electrical Equipment—Part 1: General requirements for safety and essential performance—Collateral Standard: Usability

EMC Standards

IEC 60601–1–2:2014 includes EMC requirements and tests. Medical Electrical Equipment including CISPR 11:2009 + A1:2010, Group 1, Class A.

Precautions

Instructions for Use – General

The Lux 35 detector is intended to be used in a Professional Healthcare Facility environment except near high frequency surgical equipment or outside the RF shielded room of a medical equipment system for resonance imaging.

The DRX detectors have the following essential performance as defined in IEC 60601-1: Image Retention.

WARNING:
Use of this equipment adjacent to or stacked with other equipment should be avoided because it could result in improper operation. If such use is necessary, this equipment and the other equipment should be observed to verify that they are operating normally.

WARNING:
Use of accessories, transducers and cables other that those specified or provided by the manufacturer of this equipment could result in increased in increased electromagnetic emissions or decreased electromagnetic immunity of this equipment and result in improper operation.

Technical Description of the Lux 35 Detector

The Lux 35 detector is considered group 1, Class A for conducted and radiated emissions according to CISPR 11.

Note:
The emissions characteristics of this equipment make it suitable for use in industrial areas and hospitals. If it is used in a residential environment (for which CISPR class B is normally required) this equipment might not offer adequate protection to radio-frequenct communication services. The user might need to take mitigation measures, such as relocating or re-orienting the equipment.

Basic safety must be maintained by keeping cabinetry and shielding intact as delivered and following the safety and EMC instructions in this guide.

Requirements Applicable to Equipment That Transmits/ Receives Electromagnetic Energy for Operation

DRX detectors transmit and receive wireless communications with the following characteristics.

Frequency	Modulation	Power
2412-2462	BPSK, QPSK, 16QAM, 64QAM, DBPSK, DQPSK, CCK	9.51 dBm
5180-5825		11.83 dBm

FCC Notice (United States)

This equipment complies with part 15 of the FCC Rules. Operation of the device is subject to the following two conditions:

1. This equipment may not cause harmful interference.
2. This equipment must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy. If it is not installed and used in accordance with the instruction manual, it may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the users will be required to correct the interference at their own expense.

Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

CAUTION:

This is a Class A product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

Guidance and Manufacturer's Declaration for Electromagnetic Emissions

The equipment is intended for use in the electromagnetic environment specified below. The customer or user of the equipment should ensure that it is used in such an environment.

Emissions Test	Compliance	Electromagnetic Environment—Guidance
RF emissions: • EN 55011 • CISPR 11	Group 1	The equipment uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions: • EN 55011 • CISPR 11	Class A	The equipment is suitable for use in all establishments other than domestic and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonics emissions: • EN 61000-3-2 • IEC 61000-3-2	Compliant	The equipment is suitable for use in all establishments other than domestic and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Voltage fluctuations and flicker emissions: • EN 61000-3-3 • IEC 61000-3-3	Compliant	

Guidance and Manufacturer's Declaration for Electromagnetic Immunity

Carestream Systems are intended for use in the electromagnetic environment specified below. The customer or the user of the System should assure that it is used in such an environment.

Immunity Test	IEC 60601 Test Level	Compliance Level	Electromagnetic Environment—Guidance
Electrostatic Discharge (ESD) IEC 61000-4-2	± 8 kV contact ± 2 kV, ± 4 kV,± 6kV ± 8 kV, ± 15 kV air	± 8 kV contact ± 2 kV, ± 4 kV,± 6kV ± 8 kV, ± 15 kV air	Floors should be wood, concrete, or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30 %.
Electrical fast transient/ burst IEC 61000-4-4	± 2 kV for power supply lines ± 1 kV for input/ output lines	± 2 kV for power supply lines ± 1 kV for input/ output lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	± 1 kV line to line ± 2 kV line to earth	± 1 kV line to line ± 2 kV line to earth	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions, and voltage variations on power supply lines IEC 61000-4-11	< 5 % U_T (> 95 % dip in U_T) for 0.5 cycle 40 % U_T (60 % dip in U_T) for 5 cycles 70 % U_T (30 % dip in U_T) for 25 cycles < 5 % U_T (> 95 % dip in U_T) for 5 sec	< 5 % U_T (> 95 % dip in U_T) for 0.5 cycle 40 % U_T (60 % dip in U_T) for 5 cycles 70 % U_T (30 % dip in U_T) for 25 cycles < 5 % U_T (> 95 % dip in U_T) for 5 sec	Mains power quality should be that of a typical commercial or hospital environment **Note:** Most components in the Carestream System are powered from an uninterruptible power supply

Power frequency I (50/60 Hz) magnetic field EC 61000-4-8	30 A/m	30 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.

Note:
U_T is the mains (ac) voltage prior to application of the test level.

Guidance and Manufacturer's Declaration for Radio Frequency Immunity

Except for the Carestream DRX-Evolution Plus System and the DRX-Ascend System, all Carestream products are intended for use in the electromagnetic environment specified below. The customer or the user of the system should assure that it is used in such an environment.

Immunity Test	IEC 60601 Test Level	Maximum Power (W)	Tested
For ac power cable conducted disturbances by RF fields IEC 61000-4-6	3 V (rms)		0.15 MHz, 80 MHz
	6 V (rms)		In ISM bands between 0.15 and 80 MHz
For enclosure port radiated RF fields IEC 61000-4-3	3 V (rms)		80 MHz to 2700 MHz
Proximity fields from RF wireless equipment	27 v/m	1.8	385
	28 v/m	2	450
	9 v/m	0.2	710, 745, 780 MHz
	28 v/m	2	810, 870, 930 MHz
	28 v/m	2	1720, 1845, 1970 MHz
	28 v/m	2	2450 MHz
	9 v/m	0.2	5240, 5500, 5785 MHz

Interference may occur in the vicinity of equipment marked with the following symbol:

Recommended Separation Distance

WARNING:
Portable RF communications equipment (including peripherals such as antenna cables and external antennas) should be used no closer than 30.0 cm (12.0 in.) to any part of the DRX detectors including cables specified by the manufacturer. Otherwise, degradation of the performance of this equipment may occur.

Wireless Declaration

Radio Frequency Exposure Declarations

The equipment includes portable wireless devices according to FCC regulation 2.1093 (b). This equipment has been shown to be compliant for localized specific absorption rate (SAR) for uncontrolled environment/general exposure limits specified in ANSI/IEEE standard C95.1–1999. For the Lux 35 detector, the maximum SAR measurement, averaged over 1 gram of tissue, is 0.15 W/kg. The measured values are well under the spatial peak SAR of 1.6 W/kg specified in FCC regulation 2.1093 d (2) for uncontrolled environment/general exposure conditions.

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada.

To reduce potential radio interference to other users, the antenna type and gain should be so chosen that the equivalent isotropically radiated power (EIRP) is not more than that necessary for successful communication.

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada.

In Mexico:

Operation of this equipment is subject to the following two conditions:

1. This equipment or device may not cause harmful interference, and
2. This equipment or device must accept any interference, including interference that may cause undesired operation.

La operación de este equipo está sujeta a las siguientes dos condiciones:

1. Es posible que este equipo o dispositivo no cause interferencia perjudicial, y
2. Este equipo o dispositivo debe aceptar cualquier interferencia, incluyendo la que pueda causar su operación no deseada.

In Brazil:

This equipment carries internally the product model OLYM (Olympus WiFi Module) with ANATEL approval code 09773-19-05768.

Este equipamento carrega internamente o produto modelo OLYM (Olympus WiFi Module) com código de homologação ANATEL 09773-19-05768.

2 Detector Operation

A detector can be used with analog or digital systems to capture images digitally.

The detector translates into a digital format the X-ray energy absorbed during an X-ray exposure.

Software corrects the digital image for display on the Console.

Features

- **Portable X-ray receptor**—Used on a table, behind a patient in a bed or wheelchair, in a table, or a wall-mounted Bucky
- **Wireless or Tethered transmission**—These detectors transmit images wirelessly, powered by a battery, or via an optional tether
- **Removable Battery**

General Product Information

Lux 35 detectors absorb, measure, and translate into digital electronic format the X-ray energy imparted on internal sensors during the course of an X-ray exposure. Lux 35 detectors are patient contact equipment and are a Type B applied part. Detector communications may be wireless via internal radio or it may be wired via a tether interface device. Control and image processing software resides in a separately approved detector interface/support device. Communication with the detector is via above described wireless or tether. Examples of detector interface/support devices include, but are not limited to: DRX-1 System, DRX-Revolution and DRX-Evolution.

Patient Contact Considerations

Detectors do not transfer energy to the patient. There is no patient circuit. However, radiographers may wish to place the detector in direct patient physical contact to minimize image artifacts in certain exams. Lux 35 detectors may be used as applied parts when internally powered or when receiving supplemental power only from a tether device with the round, plastic tether interface connector. Such Carestream devices include but are not limited to: DRX-1 System Tether Interface - model DRX-TPC1.

Carestream DRX-1 System Tether Interface, model DRX-TPC1

The DRX-TPC1 provides battery charging power and wired communications connection to the detector. The DRX-TPC1 is Class II equipment and is intended to be located in the patient vicinity. The detector may be an applied part while connected to the DRX-TPC1.

Cautions

CAUTION:

- Follow all safety labels on the equipment.
- For continued safe use of this equipment, follow the instructions contained in this operator's manual.
- Study this manual carefully before using the equipment and keep it at hand for quick reference.
- The equipment must be used only by qualified personnel and only after training in the specific operations. It is the operator's responsibility to ensure the patient's safety while the equipment operates by visual observation, proper patient positioning, and use of the protective enclosure.
- Do not expose the equipment to liquid.
- Perform periodic maintenance to ensure continued safe use of the equipment.
- The equipment must be repaired only by authorized Service personnel.
- The detector is fragile and contains glass. Handle with care! Dropping or handling the detector roughly could result in damage. If the detector is dropped or handled roughly, or if there is any indication of reduced image quality, perform a calibration.
- Any attempt to open the detector by unauthorized personnel will void the warranty.
- If a detector is not used in a Bucky, it must be enclosed in a protective plastic bag that is disposed of after each patient exam.
- Change the detector battery outside the patient vicinity.

Pediatric Considerations

In order to help ensure that pediatric patients receive the minimum necessary amount of radiation while producing diagnostic quality images, the Lux 35 detector supports pediatric imaging with IMAGEVIEW software.

When the Pediatric Support Option is enabled, a wide range of views for pediatric chest and abdomen imaging are available. These views provide custom technique settings based on weight and/or age using pediatric patient sub-populations for the purpose of minimizing pediatric dose. Additionally, the system software provides detector dependent (varies based on detector type (GOS or CsI)) exposure indicators for all views to be used by radiographers as a means of monitoring and tracking exposure levels.

Search the system Online Help system, "Pediatric Support Option" and "IEC Exposure Indicators Overview" for more information.

Further information regarding special considerations for pediatrics can be found at the following websites:

- Image Gently Campaign: http://www.imagegently.org/
- FDA's Pediatric X-ray Imaging: https://www.fda.gov/Radiation-EmittingProducts/RadiationEmittingProductsandProcedures/MedicalImaging/ucm298899.htm
- Carestream's solutions for Pediatrics: https://www.carestream.com/en/us/medical/solutions/pediatric-imaging

Pediatric Use: Guidance & Considerations

Special care should be exercised when imaging patients outside the typical adult size range, especially smaller pediatric patients whose size does not overlap the adult size range (for example, less than 50 kg (110 lb) in weight and 150 cm (59 in.) in height, measurements which approximately correspond to that of an average 12 year old.

The following ranges of pediatric subpopulations are to be used as a guide for manufacturers in developing medical devices:

Pediatric Subgroup	Approximate Age Range
Newborn (Neonate)	From birth to 1 month of age
Infant	Greater than 1 month to 2 years of age
Child	Greater than 2 to 12 years of age
Adolescent	Greater than 12 through 21 years of age

Exposure to ionizing radiation is of particular concern in pediatric patients because:

1. For certain organs and tumor types, younger patients are more radio sensitive than adults (the cancer risk per unit dose of ionizing radiation is higher for younger patients);
2. Use of equipment and exposure settings designed for adults of average size can result in excessive and unnecessary radiation exposure of smaller patients;
3. Younger patients have a longer expected lifetime putting them at higher risk of cancer from the effects of radiation exposure.

To help reduce the risk of excessive radiation exposure, you should follow the ALARA (As Low As Reasonably Achievable) principle and seek to reduce radiation dose to only the amount necessary to obtain images that are adequate clinically.

Additional guidance and recommendation are provided by the Alliance for Radiation Safety in Pediatric Imaging (Image Gently Alliance) https://www.imagegently.org/

Table 1: Techniques for Typical Body Parts

Body Parts	Patient Size	kVp	mAs	SID	Grid
Abdomen AP/PA	Very Low Birth Weight (Less than 1.5 Kg)	55	1	1m	no
	Low Birth Weight (Between 1.5 and 2.5 Kg)	55	1.6	1m	no
	Newborn (Age is less than 1 month and Weight above than 2.5 Kg)	70	1.6	1m	no
	Infant (Age is between 1 month and 2 years)	73	2	1m	no
	Child (Age is between 2 years and 12 years)	75	7.1	1m	yes
	Preadolescent (Age is between 12 years and 13 years)	75	14	1m	yes
	Adolescent (Age is between 12 years and 21 years)	75	20	1m	yes
	Adult Small	75	18	1m	yes
	Adult Medium	80	22	1m	yes
	Adult Large	85	32	1m	yes

Body Parts	Patient Size	kVp	mAs	SID	Grid
Chest PA/AP	Very Low Birth Weight	50	1	1m	no
	Low Birth Weight	55	1	1m	no
	Newborn	65	1	1m	no
	Infant	70	1.6	1m	no
	Child	70	1.6	1m	no
	Preadolescent	90	2	1m	yes
	Adolescent	90	2	1m	yes
	Adult Small	110	1.8	1.8m	yes
	Adult Medium	110	2.8	1.8m	yes
	Adult Large	120	4	1.8m	yes
Extremities AP/PA	Very Low Birth Weight	50	1	1m	no
	Low Birth Weight	55	1	1m	no
	Newborn	57	1	1m	no
	Infant	57	1.2	1m	no
	Child	58	1.2	1m	no
	Preadolescent	62	1.6	1m	no
	Adolescent	62	2	1m	no
	Adult	Regarding adult details techniques of Extremities, please refer to the table of "Techniques for Adult Extremities"			no

Table 2: Techniques for Adult Extremities

Adult Extremities List	kVp	mAs	SID	Grid
Ankle - AP	58	4	1	no
Ankle - Lateral	58	4	1	no

Adult Extremities List	kVp	mAs	SID	Grid
Femur - AP	70	16	1	yes
Femur - Lateral	70	10	1	yes
Hand - PA	53	1.8	1	no
Hand - oblique	53	1.8	1	no
Humerus - AP	75	7.1	1	yes
Humerus - Lateral	70	3.2	1	yes
Knee - AP	65	10	1	yes
Knee - Lateral	65	10	1	yes
Wrist - PA	55	1.8	1	no
Wrist - Lateral	55	1.8	1	no

Change Battery

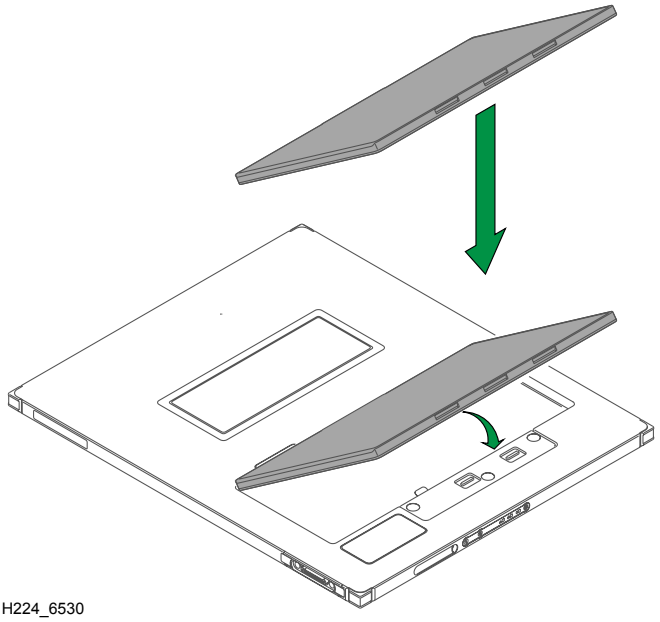
You can change the detector battery without causing the detector to reboot or lose wireless connection.

Remove the battery and replace it within 12 seconds and the detector will continue to run. If the battery is removed for more than 12 seconds, the detector will shut down.

Note:
If left undisturbed, the detector will remain active until the battery runs out.

Insert the Battery Into the Detector

1. Place a fully charged battery in the battery footprint in the detector so that the contacts on the back edge of the battery are inserted first. The battery fits into the detector only one way. See the *CARESTREAM DRX-1 System Battery and DRX Detector Battery User Guide* for technical information about the battery.
2. Push the battery down firmly until the latch catches.

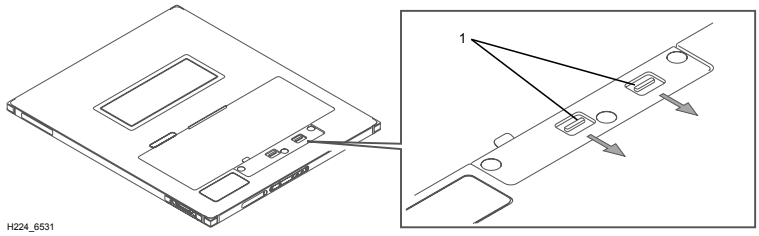


H224_6530

Battery Unlatch Procedure

Battery unlatch procedure for the detector battery:

1. Place the detector on a flat surface.
2. Simultaneously pull both tabs (1) away from the battery.



The battery pops up and releases for easy removal.

Using Detectors

Using a Single Detector

Typically, the detector is registered with the Console for a particular room, but you can register it with other Consoles in other rooms as well, or use it with mobile systems.

See *Adding and Registering a Detector* in the *System Software Online Help*.

Using Two or More Detectors in One Room

Using two or more detectors in a room makes detector identification even more important. Make sure that the label on the detector matches the label displayed on the Console.

Using Detectors in Two or More Rooms

The identification labels make it easy to prevent the mixing of detectors from one room to another. Keep a different color scheme for each room and then subsequent detectors can be assigned labels within that color.

You can register the same detector on two consoles. For example, you may use one detector as a *float* detector.

The System is designed so that if the Console cannot communicate with the selected detector, it will display a Not Ready status.

See the *System Software Online Help* for information about workflow.

Using Grids

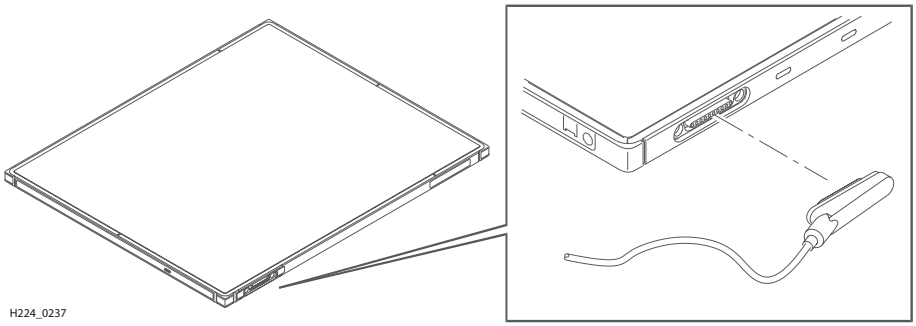
Grid artifacts are caused when the frequency of the lead lines in the stationary grid and the resolution (MTF) of the receptor conflict. The best way to prevent artifacts is to use a grid that has a line rate compatible with the receptor's resolution.

For images acquired with DRX Plus Detectors, the **only** supported grids are the following grids sold by Carestream:

- 40 lines per cm (103 lines per inch)
- 80 lines per cm (200 lines per inch)

Connect a Tether to the Detector

- Place the metal end of the tether on the magnetic bar on the side of the detector.



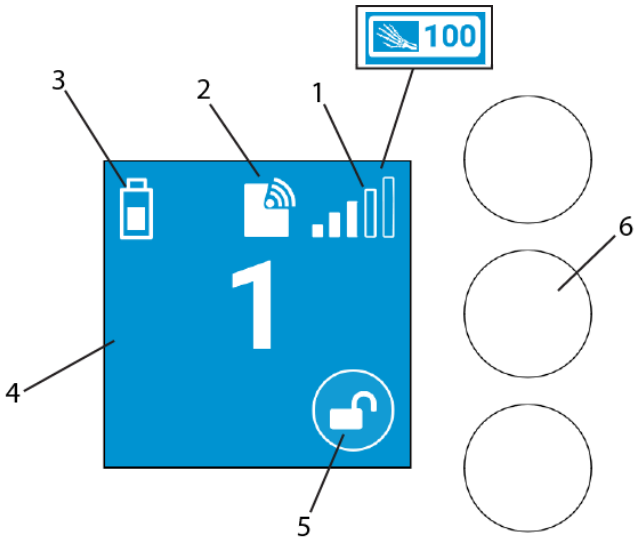
Detector Status LEDs

The Lux 35 detector has an LED on each side that will change color and flash depending on the following conditions.

LED	Detector Status
No color	The detector is in sleep mode
White (solid)	The detector is awake
Blue (solid)	The detector is selected
Green (solid)	The detector is in the Ready state
Red (solid)	An error has occurred. The error can be cleared.
Red (flashing)	An error has occurred and cannot be cleared. 1. Remove the detector battery to reset the detector. 2. Call for service.

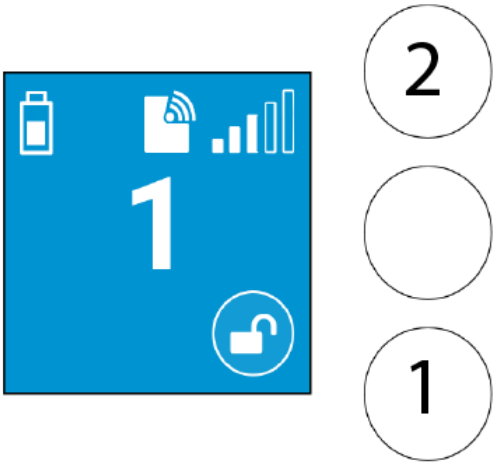
Detector User Interface

Home/Lock Screen



Item	Description
1	Wireless signal strength or Image Storage Mode Indicator and Count **Note:** This icon is not displayed when the detector is in the Image Storage Mode. When the detector is in Image Storage Mode the  icon will be displayed. The number indicates how many of images are currently stored on the detector. The maximum number of images is 100.
2	The icon as shown in the image is only displayed if the detector is in AP Mode.
3	Battery level
4	Detector ID number. Background color matches the detector label
5	Indicates the if the user interface is locked or unlocked. • When pressed (and held down), an animation displays instructing the user how to unlock.
6	Navigation buttons used to navigate screens and scroll and select settings. When unlocked, an icon will appear next to the buttons indicating the button function.

To Unlock the Screen



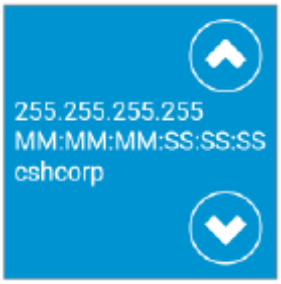
To access the user setup and status screens, press and hold the bottom button (1) and then press/release the top button (2) twice.

Detector Screens

Lock the Detector

Once unlocked, the detector will remain in this state until manually locked again or until detector LCD timeout occurs or until detector is moved and the LCD screen is turned off.

Detector Information



This screen is informational only. No values can be changed.

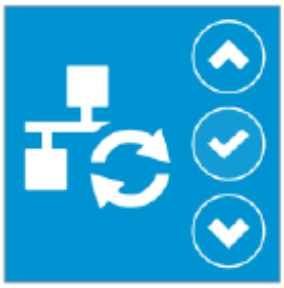
Displays:

- IP address
- MAC address
- SSID

Reboot

Performs the same function as removing the detector battery, waiting 12 seconds and reinserting the battery.

Network Reset



Resets the following back to factory defaults:

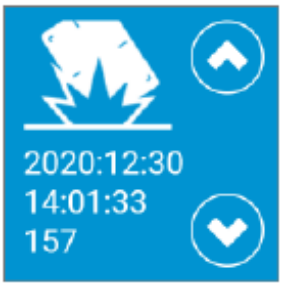
- IP address
- SSID
- Passphrase

Enter Virtual AP Mode

Places the detector into AP mode. When initially placed into AP mode, the detector toggles between AP mode (20 seconds) and Client mode (20 seconds) until the detector connects to a device.

If connected in AP mode, the AP mode icon will remain. If connected as a client, no icon will appear.

Last Major Shock Event



Indicates that the detector has experienced a shock event and provides the following information:

- Date (yyyy:mm:dd)
- Time (hh:mm:ss)
- Magnitude level (g)

Note:
This screen is informational only. No values can be changed.

Fault

Replaces the Lock/Home screen when a fault occurs.

Displays:

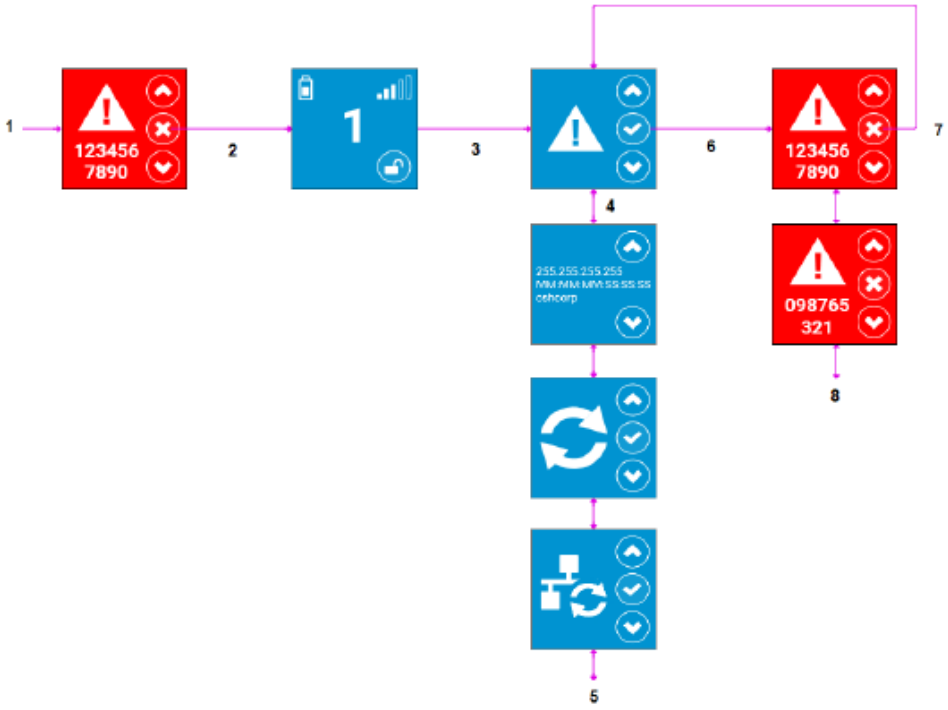
- Red background
- Fault code
- Can scroll up or down through fault codes if more than one exist.
- **X** closes red fault screen and goes to the Home/Lock screen.

Faults Menu

The Faults menu is only available/displayed when a fault is active

Enables user to navigate through menu items to gather other detector information

Faults Menu Flowchart



1	A fault occurs and the Home/Lock screen is replaced the Faults screen.
2	The user closes the Faults screen and the Home/Lock screen is displayed.
3	The user unlocks the detector and the new Faults menu is displayed. **Note:** This screen only exists when a fault is active
4	The user can navigate through the menus as usual.
5	Other menu items are available as normal.
6	The user enter the Fault list.
7	User can close the Fault list and return to the Faults menu.
8	Other faults can be viewed.

Faults

The following screen indicates that a fault has occurred and displays the detector fault code. If more than one fault has occurred, the up and down arrows are shown.

- If the detector status LEDs are solid red, press the navigation button next to **X** to dismiss the fault and return to the Lock screen.
- If the detector status LEDs are flashing red, do the following:
  1. Remove the detector battery to reset the detector.
  2. Call for service.

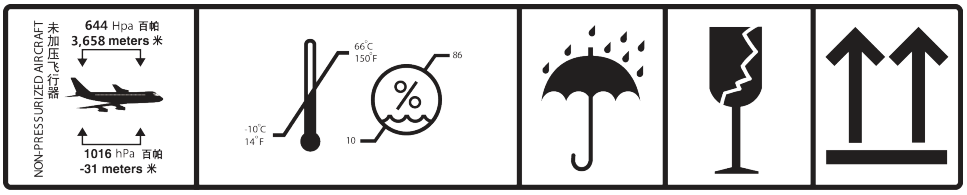
3 Detector Overview

Transport and Storage Environment

Temperature	–10 to 66 °C (+14 to 150 °F)
Relative Humidity	10–86 % RH Non-Condensing
Altitude	–31 to 3,658 m (–102 to 12,000 ft)

Note:
The following graphic is applied to the shipping package and describes the conditions that should be met while the package is in transit and storage.

Note:
The following graphic is shown for reference only. The actual shipping label may vary slightly.



Note:
The first box of the Transport Storage Environment label above indicates: **1016–644 hPa (–31 to 3,658 m), non-pressurized aircraft**.

Operating Environment

Temperature	15–30 °C (59–86 °F)
Relative Humidity	10–86 % RH
Altitude	3,000 m (9,843 ft)

Equipment Maintenance

Cautions

CAUTION:

- Do not operate the equipment when cleaning the equipment.
- Do not immerse the equipment in liquid.
- Do not spray cleaning solution directly onto the equipment.

CAUTION:

Isopropyl alcohol is a flammable solvent. Read and follow instructions in the Safety Data Sheet (SDS).

Procedure to Clean the Detector

Prerequisites:

- Appropriate cleaning solution, for example, 70 % isopropyl alcohol solution
- Clean, soft cloth

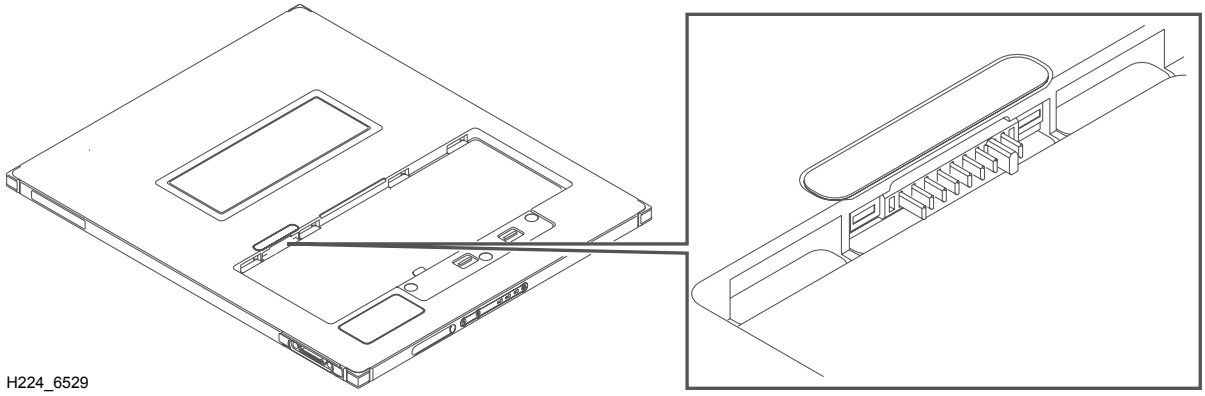
1. Disconnect the detector from its power source.
   - » Remove the tether.
   - » Remove the battery.
2. Moisten a cloth with the cleaning solution.
3. Apply the moistened cloth to the equipment.

Postrequisites:

Make sure the detector is dry before using it.

Procedure to Clean the Battery Well

1. Wipe the well in the detector clean of dust or debris with a soft cloth.
2. Use a soft brush to clean out the prongs in the battery well.



Patient Contact

With each occurrence of patient contact:

1. Disconnect the detector from its power source.
   - » Remove the tether.
   - » Remove the battery.
2. Moisten a cloth with a cleaning solution.
3. Apply the moistened cloth to the patient contact area on the equipment.

CAUTION:
Do not spray solution directly onto the equipment.

Note:
When a detector is not used in a Bucky, it should be enclosed in a protective plastic bag that is disposed of after each patient exam.

Weight Label

CAUTION:
Since the detector is not a patient support device, it must be placed on a suitable surface, such as a table or floor, before applying patient weight to it. The weight label indicates acceptable limits of use that will not damage the detector. To prolong the life of the detector and minimize potential internal detector damage, observe the following weight restrictions:

- The maximum concentrated weight over a small area of the detector surface 50 mm (2 in.) in diameter must not exceed 114 kg (250 lb).
- The maximum distributed weight applied uniformly over the entire detector surface is 170 kg (375 lb).
- If a patient stands directly on the detector and damage occurs, this is an indication that the load limit has been exceeded and is not covered by warranty. Patients can easily apply a force greater than their weight over a small area, depending on how they step onto and continue to stand on the detector.
- A weight-bearing cassette cap must be used if a patient stands on the detector.

Disposal

In the European Union, this symbol indicates that when the last user wishes to discard this product, it must be sent to appropriate facilities for recovery and recycling. Contact your local representative or refer to http://recycle.carestreamhealth.com for additional information on the collection and recovery programs available for this product.

Power Failures

There are various types of power disruptions that can affect a system: voltage sags, voltage surges, brownouts, line noise, high voltage spikes, frequent variations, switching transients, and harmonic distortions. These disruptions can be minimized by an Uninterruptible Power Supply (UPS). The System may or may not include a UPS.

Note:

A UPS provides back-up power in the event of a power failure. A UPS also conditions the power provided to the System. Back-up power will last for a specific length of time, dependent on the UPS energy storage capacity and the power requirements of the equipment. If you choose to provide a UPS for your System, follow the manufacturer's recommendation for use and battery replacement.

Publication History

Version	Date	Changes
A	2020-08-03	First release

Carestream Health, Inc.
150 Verona Street
Rochester, NY, USA 14608

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